



DARPA Urban Challenge

Instructions for Semifinalists

August 16, 2007

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Participation Agreement Semifinalists will compete at the National Qualification Event (NQE) in October 26 - 31, 2007. The team leader should email the completed signature page from the Participation Agreement (Appendix 1) to the grandchallenge@darpa.mil to arrive by 5:00 PM (EDT) Monday, August 20, 2007. Alternatively, the form may be signed and faxed to 703-807-0964. The team leader will receive an email confirmation of the team's response. DARPA will sign and return a copy to be retained by the team leader.

Event Site The event site is the former George Air Force Base (AFB) in Victorville, California, now the Southern California Logistics Airport.

No teams or team representatives may visit the site prior to October 24, 2007. Closed areas include the former George AFB including all areas of the Southern California Logistics Airport (SCLA). The closed area includes the perimeter roads (Phantom East, Phantom West, and Air Expressway Boulevard). Teams that do not conform to this closure policy will be disqualified.

Teams are allowed to visit nearby cities to identify needed facilities and may also access online maps and images to become familiar with the area.

Government Supplied E-Stop All teams must have a Government-supplied E-stop system integrated and tested on their vehicle before arriving at NQE. One E-stop will be shipped to the team shortly after the signed Participation Agreement is received by DARPA. The Participation Agreement defines the terms of the loan of the E-stop system to the team by DARPA and describes the conditions under which DARPA will take legal responsibility for the team's autonomous vehicle at the NQE and Final Event.

The team leader will be notified by email when the E-stop system is shipped. Each team must inspect the contents of the E-stop kit and return the completed inventory and inspection sheet to grandchallenge@darpa.mil within 7 business days of the E-stop arrival.

Technical information regarding the E-stop is available at www.darpa.mil/grandchallenge/rules.asp.

NQE Registration DARPA will email team leaders the URL to the registration website after receipt of the signed Participation Agreement. Up to 25 team members may register to be placed on the team roster and receive credentials for access to the team's pit area during restricted hours. Team leaders who need to provide after-hours access to more than 25 team members should send an email explaining their requirements to grandchallenge@darpa.mil.

Teams may arrive at the site between 0700 and 1600 on October 24 or 25. The team should attend the Team Welcome Meeting on October 25 at 1700 in the spectator tent (team leader attendance is mandatory). There may be additional meetings between DARPA officials and team representatives during the week as needed.

Team members will receive a picture badge on-site. Pictures may be submitted in advance as described on the registration website.

Team Liaison Before arrival at NQE, team leaders should be contacted by a member of the DARPA staff assigned as team liaison. The team liaison is an information resource and will be present on-site to assist as required. Technical questions and interpretations of guidelines should be addressed to grandchallenge@darpa.mil (not to the liaison). Team liaisons will be interested in learning technical details about your design, and how the robot behaves in various situations.

Pit Area Space is limited at the event site, so teams should plan accordingly. Each team is assigned a paved pit area of at least 1600 square feet in a fenced compound. Additional space may be available at a more remote, unpaved location to park additional vehicles. Teams intending to bring a trailer or a vehicle that won't fit in their pit area, or have special requirements regarding the shape of the pit should send an email to grandchallenge@darpa.mil by August 24.

Team members may work in the pit area 24 hours with proper credentials, but sleeping or camping in the pit area is not allowed. Sponsors and other team guests may be escorted into the pit area after hours by credentialed team member. The escort must stay with the guests during this time in the pit area.

Teams should plan to provide their own shelter in the pits and should be aware that the area is subject to occasional strong winds when planning to use tents or sunshades.

Overhead lighting will be put in these areas, but no electrical power, tools or other amenities will be provided. Teams are responsible for security of their vehicle and equipment, and should plan to lock up tools and other valuables.

Teams are allowed to bring their vehicles off-site for repair by notifying DARPA of their intent to do so. Teams must not remove their vehicles for the purpose of testing them in the neighboring areas.

Wireless internet connectivity and wall power for laptops is available in the spectator tent.

Smoking is not allowed in the pit area. Open flames of any kind (propane stove, barbecue grill, etc) are not allowed in this area.

Fueling may only be done at a service station (off-site) or under direct supervision of DARPA.

Pets are not allowed in the team pit area.

Alcoholic beverages may not be brought onto the event site property. The only alcohol consumed must be purchased from the licensed vendor during the event.

Accommodations Teams are responsible for booking their hotel rooms. There is no hotel block for teams. Team members are not allowed to camp overnight or sleep in the pit area. Nearby RV parks are available as alternative accommodations to area motels.

Vendors will be on-site during limited hours each day offering food and beverages.

Vehicle Shipping and Storage The on-site shipping address is

DARPA
Trailer across from:
18425 Starfighter St
Victorville, CA 92394

Personnel will be available to accept shipments at this address starting on October 18. Teams wishing to ship their vehicle to arrive at the site should send their request to grandchallenge@darpa.mil to ensure proper handling on-site.

Logo The Urban Challenge logo in high resolution format will be made available to all teams for display on their vehicles. A form will be emailed to the team leader regarding permission to use the logo.

Hospitality Area A limited area exists for teams to put up hospitality tents. Requests for space in the hospitality area (including square footage and intended function) should be sent to gclgistics@darpa.mil. Highest preference will be given to functions that welcome the general public.

Media Credentials will be provided to members of the media only, not team media representatives. One media representative from each team may attend press briefings if space allows.

Team Guests Team guests have full access to the pit area if accompanied by a credentialed team member, but otherwise have full access to all spectator areas on the course.

RNDF Distribution The RNDF for the NQE will be issued to teams upon arrival, October 24 - 25.

Arrival Teams should plan on arriving at the event site as a group, if possible. Team members should park vehicles in the short term parking lot while registration is completed in the registration tent.

Test Scheduling Testing will be conducted in morning and afternoon blocks at three test locations. Teams may be tested twice in one day (morning and afternoon), but will not be tested twice in the morning or afternoon. Scheduling is very tight, so teams should plan to have their vehicle in place and ready to run at the start of each test block (0700 PDT for the morning block, 1200 PDT for the afternoon block). Each vehicle will be assigned a time slot within which all testing must be completed. MDFs will be given to teams at least five minutes before the test is scheduled to start.

Practice Areas Two unimproved practice areas are available for vehicle calibration. These areas are graded dirt lots without signs or markings. These are the only areas outside DARPA's test areas where autonomous vehicle operation is allowed.

Practice areas will be open starting October 24 at 0700 PDT. Preliminary GPS points defining the perimeter of the practice areas are given below:

Practice Area 1

34.578442, -117.371553
34.578442, -117.370358
34.576892, -117.371553
34.576892, -117.370358

Practice Area 2

34.579189, -117.371553
34.579189, -117.369850
34.578575, -117.371553
34.578575, -117.369850

Practice areas are subject to change as the event site construction is completed. Additional information regarding entry to these areas will be posted as it becomes available in October. Practice areas will be available to teams October 24-25, and during unscheduled blocks.

Schedule of Events

August 20	1700 EDT	Deadline Participant Agreement receipt
August 20		Registration website opens
October 24	0700 PDT	NQE open for team arrivals
October 24-November 1		Practice area open from 0700 – 1600 PDT
October 25	1700 PDT	Team Welcome Meeting

October 26	0700 PDT	NQE Opening Ceremony
October 26	0800 – 1200 PDT	E-Stop testing
October 26	1300 – 1800 PDT	NQE Operations
October 27-31	0700 – 1800 PDT	NQE Operations
November 1	1000 PDT	Announcement of Finalists
November 2	0700 –1400 PDT	Practice Starts (mandatory for all teams)
November 3	0700 PDT	Urban Challenge Event start
November 4	1000 PST	Awards Ceremony

AGREEMENT

BETWEEN

TEAM NAME
ADDRESS

AND

DEFENSE ADVANCED RESEARCH PROJECTS AGENCY
3701 NORTH FAIRFAX DRIVE
ARLINGTON, VIRGINIA 22203-1714

AGREEMENT NO: HR0011-05-3-00XX
ARPA ORDER: None
Government Funding of this Agreement: None
Authority: 10 U.S.C. 2371
Appropriation: None

This Agreement is entered into between the United States of America, hereinafter called the Government, represented by the Defense Advanced Research Projects Agency (DARPA), and **TEAM NAME** pursuant to and under U.S. Federal Law

FOR TEAM NAME

By _____

Title _____

Date _____

**FOR THE DEFENSE ADVANCED
RESEARCH PROJECTS AGENCY**

By _____

Title _____

Date _____

ARTICLE 1.0 DEFINITIONS

Bailment The transfer of possession (but not ownership or title) of personal property for a limited time or specified purpose such that the entity taking possession is to some extent responsible for the property.

DARPA Urban Challenge (DUC) All events associated with the DUC, to include all activities that take place in the DUC start/finish area or along the DUC route. This event is conducted from October 24 – November 3, 2007 at the Southern California Logistics Airport (SCLA). In case of inclement weather, the event will extend to November 4, 2007.

Data Recorded information, regardless of form or method of recording, that includes, but is not limited to, technical data, vehicle tracks, software, trade secrets, and visual images.

E-stop The electronic safety radio and tracking system supplied by the DARPA to selected DUC entrants to enable an operator to remotely stop, start or disable an entrant's Urban Challenge vehicle.

Government Purpose Rights The right to use, modify, release, perform, display, or disclose data in whole or in part and in any manner for Government purposes only, and to have or permit others to do so for Government purposes only.

DARPA Urban Challenge (DUC) All events associated with the DUC, to include all activities that take place in the DUC start/finish area or along the DUC route. This event is conducted from October 24 – November 3, 2007 at the Southern California Logistics Airport (SCLA). In case of inclement weather, the event will extend to November 4, 2007.

National Qualification Event (NQE) The primary qualification event for the DUC which takes place from October 24-31, 2007.

Parties The team leader and DARPA.

Route All areas of the race course used by vehicles at the Urban Challenge Final Event (UCFE). The Route includes designated areas for robot operation and does not include the Spectator Area or Team Area.

Spectator Area Areas abutting the Urban Challenge course that are open to the public for viewing of the DUC. The Spectator Area includes the spectator tent, parking lot, and team pits.

Team The group of individuals as defined in the DUC rules who have been identified on the team roster to DARPA.

Team Area The team pits including associated access roads and walkways.

Team Leader The individual identified to DARPA as legally responsible for the team and signatory to this Agreement.

Test Course Any of the test areas used by DARPA during NQE or in preparation for the UCFE.

Unlimited Rights The right to use, modify, release, perform, display, or disclose data, in whole or in part, in any manner and for any purposes whatsoever, and to have or permit others to do so.

Vehicle The autonomous ground vehicle entered in the DUC.

ARTICLE 2.0 PURPOSE

The DARPA DUC is a field test of autonomous vehicles undertaken by teams with the intent of winning a prize cash prizes offered by DARPA. The DUC begins with a set of qualifying events and culminates in the UCFE, a demonstration and race conducted over a specified route at the SCLA on or about November 1-3, 2007. The UCFE is preceded by the NQE), conducted from October 24- 31, 2007, at the same location. During all test events and the final event, vehicles will be operated under the direct supervision of DARPA.

Due to the experimental nature of the vehicles involved, DARPA provides an emergency stop system (E-stop) that must be installed and tested on each vehicle to meet the operational requirements specified in the DUC rules. The E-stop enables remote control by relaying RUN, PAUSE, and DISABLE commands to the vehicle over a wireless link, is the primary means for timing the event, and conveys tracking information. The team leader is solely responsible for proper installation of the E-stop and for effective implementation of the functions corresponding to the RUN, PAUSE, and DISABLE commands in a manner that ensures safe and effective vehicle control.

This Agreement serves three purposes:

- DARPA agrees to provide a bailment to the team leader of an E-stop for the duration of the team's participation in the DUC.
- The team leader agrees to provide a bailment to DARPA of the vehicle during certain periods as specified in this Agreement and to relinquish control of the vehicle as specified.
- Ownership and rights to specific data associated with DUC participation are assigned.

ARTICLE 3.0 E-STOP

DARPA agrees to provide an E-stop system to the team leader at no cost. The E-stop consists of a receiver unit; a transmitter unit; and associated cables, antennas, and mounting hardware. It is the sole responsibility of each team to properly install the receiver and tracking unit in its vehicle and to certify the vehicle will respond properly to the E-stop commands as described in the DUC rules. The team is required to follow the Urban Challenge E-stop Guidelines, dated April 23, 2007 for requirements and responsibilities. This document is available at www.darpa.mil/grandchallenge.

Upon receipt of the E-stop, the team should perform an inventory of the received kit, inspect the E-stop for any damage, and test the system to ensure proper operation. The team leader has 7

business days after receipt of the E-stop to return the inventory checklist to DARPA acknowledging receipt of the system, documenting any damage, and detailing any shortfalls in the kit. Where possible, DARPA will repair or replace defective E-stop units or parts at no cost providing the problem was caused by a defective system and not as a result of improper installation or operation by the team. The team should consult the E-stop help desk for technical assistance. Under no circumstances should the team attempt modification or repair of the units unless so directed by the E-stop help desk. DARPA shall incur no liability from the team's use of this technical assistance or other assistance offered at DUC by DARPA. The E-stop and associated vehicle functions must be fully operational for the team to participate in the DUC.

The team leader shall return the E-stop to DARPA within 24 hours from the date of any of the following events: withdrawal, disqualification, or elimination of the vehicle from the DUC; completion of the Urban Challenge route; or upon request by DARPA for any reason. Instructions will be issued by DARPA for disposition of the E-stop for each of these circumstances. If the team is designated as an alternate by DARPA, the team leader shall return the E-stop system as specified by DARPA.

The team leader is responsible for loss, damage, or destruction of the E-stop during those periods when the bailment is in effect. Team leaders that fail to return the E-stop, or any part of the E-stop, shall reimburse DARPA for the full replacement cost of the missing equipment.

ARTICLE 4.0 VEHICLE

The bailment period for each team's vehicle shall consist solely of those periods when DARPA representatives are in physical possession and control of the vehicle during the DUC.

The team will register upon arrival at the SCLA, Victorville, California. To participate in the DUC, the vehicle must successfully pass the safety inspection by DARPA at SCLA.

During NQE, bailment of the vehicle will commence whenever the vehicle enters the start chute as directed by DARPA to enter the Test Course. The bailment will remain in effect as long as the vehicle is on the Test Course under DARPA supervision. The bailment will terminate when control of the vehicle is turned over to the Team, either on or off the Test Course. The bailment is not in effect when the team is removing the vehicle from the Test Course, when the vehicle has left the Test Course, when the vehicle is in the Team Area, or when the vehicle is at any other location on or off the SCLA.

During NQE, DARPA may retain control of the vehicle until after all testing of all vehicles on a Test Course has been completed. In this case, the bailment will remain in effect until DARPA returns control of the vehicle to the Team.

During the UCFE, DARPA may direct the Team to make the vehicle available to participate in preparation activities before entering the Route. During these preparation activities, the bailment shall be in effect whenever DARPA has taken control of the vehicle including when the vehicle has entered the start chute and is readied for autonomous operation. The bailment shall terminate when DARPA has returned control of the Vehicle to the Team. When the vehicle attempts the Route on or about November 3, 2007, the bailment shall be in effect when the

vehicle is in the start chute and is readied for autonomous operation. The bailment remains in effect until DARPA returns control of the vehicle to the Team.

The vehicle bailment shall not apply when the vehicle is removed from the SCLA or is not under DARPA's control.

Notwithstanding any of the terms of this bailment agreement, all team participants are required to follow the rules and regulations of the DARPA and the SCLA. The team leader is responsible for the conduct of all members of his or her team.

The bailment period for the vehicle will not be in effect at any other time during the DUC except during the periods specified in this Article.

ARTICLE 5.0 LIABILITY

The team leader is required to provide notice to DARPA of any claim or suit against the team or team leader for which DARPA may assume liability. The team agrees to assist DARPA in the defense of any claim or suit.

ARTICLE 6.0 DATA RIGHTS

DARPA shall have ownership of all data created, collected, stored, or transmitted by the E-stop.

DARPA reserves the right to photograph, capture video, and otherwise record the appearance of vehicles, team members, and their support equipment operated by the team. DARPA shall have ownership of all such imagery and may broadcast or make available over the Internet any video, photographs, or other data collected.

DARPA may make all, some, or none of the data described above in which DARPA has ownership or unlimited rights available to the public at the conclusion of the DUC.

ARTICLE 7.0 COSTS AND FUNDING

This Agreement does not provide authority for the team to incur any costs that may subject DARPA to responsibility for funding or financial obligations.

ARTICLE 8.0 DISPUTES

The parties shall communicate with one another in good faith and in a timely and cooperative manner when raising issues relative to this Agreement. Nothing in this Agreement shall be deemed to give the team a right to dispute matters which are not the subject of this Agreement.

A. Dispute Resolution Procedures

1. Any disagreement, claim or dispute between DARPA and the team concerning questions of fact or law arising from or in connection with this Agreement, and, whether or not involving an alleged breach of this Agreement may be raised only under this disputes provision.

2. Whenever disputes, disagreements, or misunderstandings arise, the parties shall attempt to resolve the issue(s) by mutual discussion as soon as practicable. In no event shall a dispute, disagreement, or misunderstanding that arose more than 30 days prior to the notification made under subparagraph A.3 of this Article constitute the basis for relief under this Article unless the Director of DARPA waives this requirement.

3. Failing resolution by mutual agreement, the aggrieved party shall notify the other party (through the DARPA Program Manager or team leader, as the case may be), in writing of the dispute. After providing notice to the other party both parties shall, within 24 hours, submit written documentation of the dispute, disagreement, or misunderstanding to the Director of DARPA for resolution. The written documentation shall detail relevant facts, identify unresolved issues, and specify the remedy sought. Any decision or resolution by the Director of DARPA is final and binding.

Activities at the DUC shall not be delayed pending resolution of a dispute unless so directed by the Director of DARPA.

B. Limitation of Damages

Claims for damages of any nature whatsoever pursued under this agreement shall be limited to direct damages only. In no event shall DARPA be liable for claims for consequential, punitive, special and incidental damages, claims for lost profits, or other indirect damages.

ARTICLE 9.0 MODIFICATION AND TERMINATION

This Agreement sets forth the entire and complete agreement between the parties regarding the matters which are the subject of this agreement and may be modified only by written consent of the team leader and the DARPA Agreements Officer.

DARPA may terminate this Agreement at any time and for any reason. This Agreement shall terminate upon return of the E-stop and compliance by the team leader with all terms described herein. Upon termination, allocation of data rights will be in accordance with the requirements set forth in Article 6.0.

Decisions regarding termination of this Agreement are solely at the discretion of the Director of DARPA and are not subject to dispute.

ARTICLE 10.0 EXECUTION

This Agreement constitutes the entire agreement of the parties and supersedes all prior and contemporaneous agreements, understandings, negotiations, and discussions among the parties, whether oral or written, with respect to the subject matter hereof. This Agreement, or modifications thereto, may be executed in counterparts, each of which shall be deemed as original, but all of which taken together shall constitute one and the same instrument.

This Agreement is limited to the subject matter contained herein.

11.0 AGREEMENT ADMINISTRATION

Representatives of the Parties are as follows:

Administrative matters under this Agreement shall be referred to the following representatives of the Parties:

Government:

Agreements Administrator/Officer:

MICHAEL MUTTY

DARPA

3701 N. Fairfax Drive

Arlington, Virginia 22203-1714 (571) 218-4588 (voice)

Email: michael.mutty@darpa.mil (703) 741-7806 (fax)

Technical Officer:

NORMAN WHITAKER

DARPA

3701 N. Fairfax Drive

Arlington, Virginia 22203-1714 (571) 218-4207 (voice)

Email: norman.whitaker@darpa.mil (703) 696-2209 (fax)

Team:

Team Leader Name: _____

Team Leader Address: _____

Shipping Address (if different): _____

Telephone: _____

Email: _____